REMARKS

The Examiner indicated that claims 1-18 are withdrawn. However, Applicants have no record indicating that claims 1-18 have been withdrawn. Applicants respectfully request that the Examiner provide evidence supporting the Examiner's contention that claims 1-18 have been withdrawn.

In the absence of evidence demonstrating that claims 1-18 have been legitimately withdrawn, Applicants respectfully request that claims 1-18 be examined.

The Examiner objected to claims 2, 3, 7, 8, 9.

The Examiner rejected claims 19-21 under 35 U.S.C. §102(b) as allegedly being anticipated by US Patent 5,986,218 (hereafter Muto).

The Examiner rejected claims 19-30 under 35 U.S.C. §102(b) as allegedly being anticipated by US Patent 6,040,524 (hereafter Kobayashi).

Applicants respectfully traverse the claim objections and §102 rejections with the following arguments.

Claim Objections

The Examiner objected to claims 2, 3, 7, 8, 9, stating that "claims 2, 3, 7, 8, 9 are objected to because of the following informalities: the indicated claim numbers are missing."

In response, Applicants maintain that Applicants properly filed the patent application with no indicated claim numbers missing with respect to claims 2, 3, 7, 8, 9 or with respect to any other claim.

Applicants refer the Examiner to the website of the United States Patent and Trademark Office (USPTO) which has published Applicants' patent Application with no missing claim numbers. If there were missing claim numbers in the filed patent application, the USPTO would not be able to publish Applicants' patent application with no missing claim numbers on the USPTO website.

Accordingly, Applicants respectfully request that the objection to claims 2, 3, 7, 8, 9 be w3ithdrawn.

35 U.S.C. §102(b): Muto

The Examiner rejected claims 19-21 under 35 U.S.C. §102(b) as allegedly being anticipated by US Patent 5,986,218 (hereafter Muto).

Applicants respectfully contend that Muto does not anticipate claim 19, because Muto does not teach each and every feature of claim 19.

For example, Muto does not teach the feature: "wherein a width distribution of the second wire in a Z direction that is orthogonal to the X and Y directions is tailored so as to limit the temperature gradient dT(X)/dX to be below a real positive number ϵ for all values of X, and wherein ϵ is predetermined to be sufficiently small so as to substantially mitigate adverse effects of electromigration in the first wire".

The Examiner argues: "Muto discloses a multilayered substrate (see FIG. 10(B)) stacked (1, 3) in the Y direction with the length of said layers being oriented in the X direction, wherein the first and second electrically conductive wires (2, 12) are within the first layer with both said wires oriented in the X direction, wherein the first and second wires are electrically and thermally coupled by a structure (13) located outside said first layer and do not physically touch, wherein a width distribution of the second wire (12) is oriented in the Z direction and is chosen so as to limit the temperature gradient to be zero or negative for all possible lengths of the multilayered substrate, wherein the second wire's width distribution is modified in order to substantially mitigate the adverse effects of electromigration in the first wire".

In response, Applicants disagree with the Examiners contention that Muto teaches "wherein a width distribution of the second wire (12) is oriented in the Z direction and is chosen so as to limit the temperature gradient to be zero or negative for all possible lengths of the

multilayered substrate, wherein the second wire's width distribution is modified in order to substantially mitigate the adverse effects of electromigration in the first wire".

First, the Z direction in FIG. 10B of Muto is the direction corresponding to "d" in FIG. 10B, since the layers are stacked in the Y direction (i.e., in the direction of "t"), and the X direction is the direction in which the length of the layers are oriented (i.e., from the front to back of each layer). Applicants maintain that there is no teaching in Muto of any constraint on the width of wire 12 in the Z direction (i.e., in the direction of "d").

Second, the description of FIGS. 10A-10B in Muto, col. 9, line 22 - col. 10, line 10 does not discuss tailoring any dimension in FIG. 10B to limit a temperature gradient in any direction. In fact, the description of FIG. 10B by Muto does not even mention temperature or temperature gradients. There is no teaching in Muto that discusses tailoring a wire width to limit a temperature gradient. Indeed, the discussion of FIG. 10B in Muto is focused in constraining the electric field (see Muto, col. 9, lines 36-39; col. 10, lines 6-10) and not limiting a temperature gradient.

Third, the description of FIGS. 10A-10B in Muto, col. 9, line 22 - col. 10, line 10 does not discuss or even mention electromigration.

Based on the preceding arguments, Applicants respectfully maintain that Muto does not anticipate claim 19, and that claim 19 is in condition for allowance. Since claims 20-21 depend from claim 19, Applicants contend that claims 20-21 are likewise in condition for allowance.

35 U.S.C. §102(b): Kobayashi

The Examiner rejected claims 19-30 under 35 U.S.C. §102(b) as allegedly being anticipated by US Patent 6,040,524 (hereafter Kobayashi).

Applicants respectfully contend that Kobayashi does not anticipate claim 19, because Kobayashi does not teach each and every feature of claim 19.

For example, Kobayashi does not teach the feature: "wherein a width distribution of the second wire in a Z direction that is orthogonal to the X and Y directions is tailored so as to limit the temperature gradient dT(X)/dX to be below a real positive number ϵ for all values of X, and wherein ϵ is predetermined to be sufficiently small so as to substantially mitigate adverse effects of electromigration in the first wire".

The Examiner argues: "With regard to claim 19, Kobayashi discloses a multilayered substrate (see figures 4, 5, and 6, see col. 7, lines 26-30) including layers (L_1, L2, L3, L4) stacked in the Y direction with the length of said layers being oriented in the X direction, wherein the first and second electrically conductive wires (114) are within the first layer (L_1, see col. 12, lines 58-59) with both said wires oriented in the X direction, wherein the first and second wires are electrically and thermally coupled by a structure (113, see col. 7, lines 15-19) located outside said first layer and do not physically touch, wherein a width distribution of the second wire is oriented in the Z direction and is chosen so as to limit the temperature gradient to be zero or negative for all possible lengths of the multilayered substrate, wherein the second wire's width distribution is modified in order to substantially mitigate the adverse effects of electromigration in the first wire.".

In response, Applicants note that there is no mention of "temperature", "temperature

gradient", "electromigration" in Kobayashi's discussion of FIGS. 4-6 in col. 6, line 41 - col. 9, line 60. In fact, that there is no mention of "temperature", "temperature gradient", "electromigration" anywhere in Kobayashi. There is no teaching in Kobayashi that discusses tailoring a wire width to limit a temperature gradient. Applicants respectfully contend that the Examiner has provided arguments having no support and are therefore not persuasive.

Based on the preceding arguments, Applicants respectfully maintain that Kobayashi does not anticipate claim 19, and that claim 19 is in condition for allowance. Since claims 20-30 depend from claim 19, Applicants contend that claims 20-30 are likewise in condition for allowance.

CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below. The Director is hereby authorized to charge and/or credit Deposit Account 09-0456.

Date: 10/24/2005

Jack P. Friedman
Registration No. 44,688

Schmeiser, Olsen & Watts
3 Lear Jet Lane, Suite 201
Latham, New York 12110
(518) 220-1850